

Operating instructions



SAT-IF ROUTER

SAT IF → SAT IF



SMA 001
Part N°: 7905.81

...Setting Signals

Contents

1. Safety and operating instructions	3
2. Device variants	3
3. General	3
4. Features	3
5. Functional description.....	3
6 Explanation of the operating elements	4
6.1 Front view	4
6.2 Meaning of the Status LED	4
6.3 Explanations of the function keys	4
6.4 Rear view	4
7. Adjustments	5
7.1 Adjustment with the PC/ laptop.....	5
7.2 Adjustment with SNMP.....	5
8. Programming by web server	5
8.1 Main menu	5
8.2 Edit labels	6
8.3 System settings	6
8.4 User administration	6
9. SNMP management.....	7
9.1 Management Information Base (MIB)	7
9.2 Download MIB	7
9.3 SNMP management software.....	7
10. Block diagram	8
11. Application example.....	9
12. Technical data	9
13. Glossary	10
14. Bibliography	10
15. Document history	10
CE Declaration of Conformity	11

1. Safety and operating instructions



When installing, starting-up and adjusting the device, it is necessary to consider the system specific references in the instruction manual.



The device may only be installed and started up by authorized technical personnel.



When installing the device into the receiving points, the adherence of the EMC regulations is to be ensured.



The assembly and wiring have to be done without voltage.



With all work the defaults of the DIN EN 50083 have to be considered. It is especially important to follow DIN EN 60728-11 [1].



The devices come under protection classification I. It is absolutely necessary, therefore, to insert the mains plug into a socket with protective contact.



WEEE-Reg.-Nr. DE 50389067

2. Device variants

SMA 001	7905.81	SAT IF → SAT IF, 90 ... 240 V power supply
SMA 001	7905.82	SAT IF → SAT IF, 48 V DC port
SMA 001	7905.83	SAT IF → SAT IF, 12 V DC port

3. General

The SAT-IF ROUTER SMA 001 is a device of the headend system A-LINE, which is conceived as a complete system for big and middle sized networks. The SMA 001 is a controllable signal switch for the satellite IF range. The device is an independently operating unit in 19 " rack (2 RU). The power supply is redundant as a wide-range power supply. The 48 V version is also redundant.

The SMA 001 has 16 signal inputs and 16 signal outputs. Via the web interface, any input signal can be routed to any output. At the same time, the input signals are also permanently at 16 loop outputs for further use. Thus, this module can optimally be used as a remote-controlled satellite IF signal source selector for the individual supply of terminal equipment, e.g. redundancy assemblies.

4. Features

- signal source switch for headends
- SAT IF router: routes 16 inputs to 16 outputs free selectable
- cascable system
- IP-based controlling via integrated web server
- supports SNMP version 1
- 19 " 2 RU stand-alone device

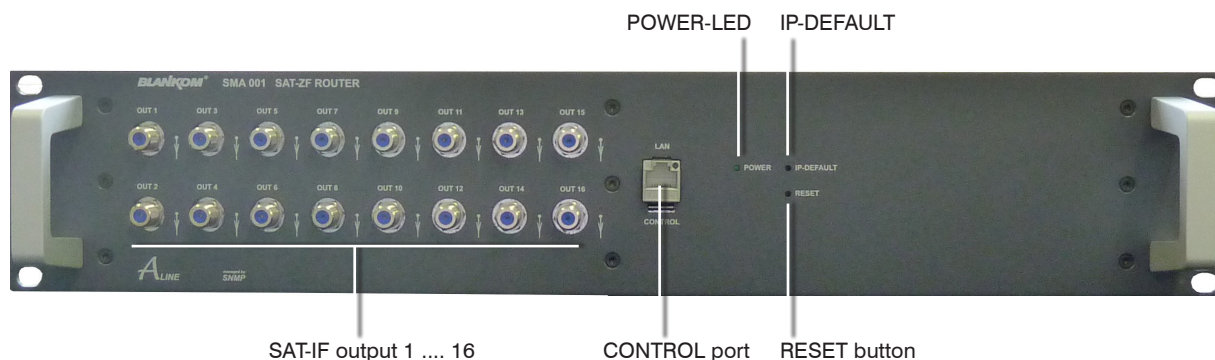
5. Functional description

With the SAT-IF ROUTER SMA 001 each of the 16 switching outputs can be routed to any of the 16 inputs for the frequency range 950 up to 2150 MHz. The 16 inputs are grouped into four groups each with 4 inputs. Usually every input is assignable to arbitrary SAT-IF signals.

Each of these groups can supply a LNB with fixed 12 V. The power is switched via software per group and electronically secured. The 16 input signals are available at 16 further outputs for cascading other boards. The controlling of the device is via Ethernet 10 Mbit (HTML, SNMP version 1).

6. Explanation of the operating elements

6.1 Front view



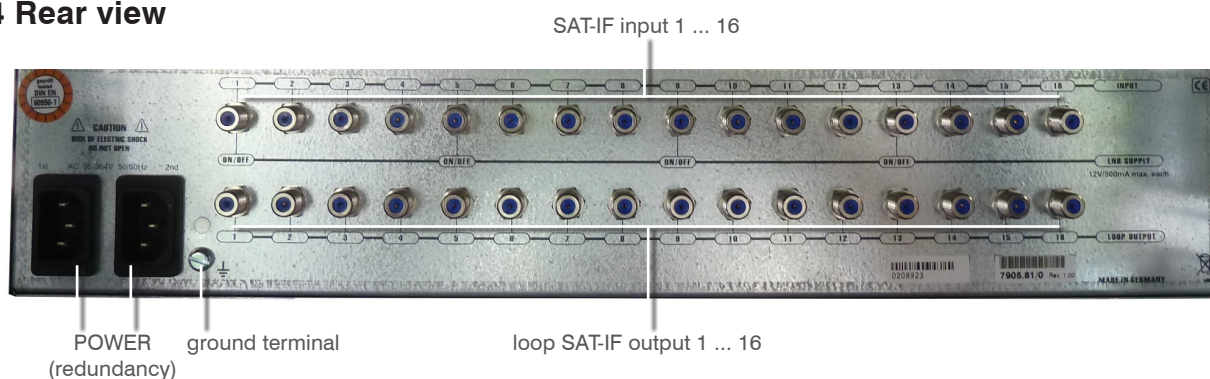
6.2 Meaning of the status LED

Designation (Colour)	Status	Meaning of display
Power (green)	permanently on	Device is working
	off	Device is off, without current supply

6.3 Explanations of the function keys

Key	Function
RESET	Reboot the device and setting the stored values
IP-DEFAULT	Resets the device back to the default IP address 192.168.2.80. Hold the key down until POWER LED signals the transfer (after approximately 25 s).

6.4 Rear view



7. Settings

7.1 Setting via PC/ laptop

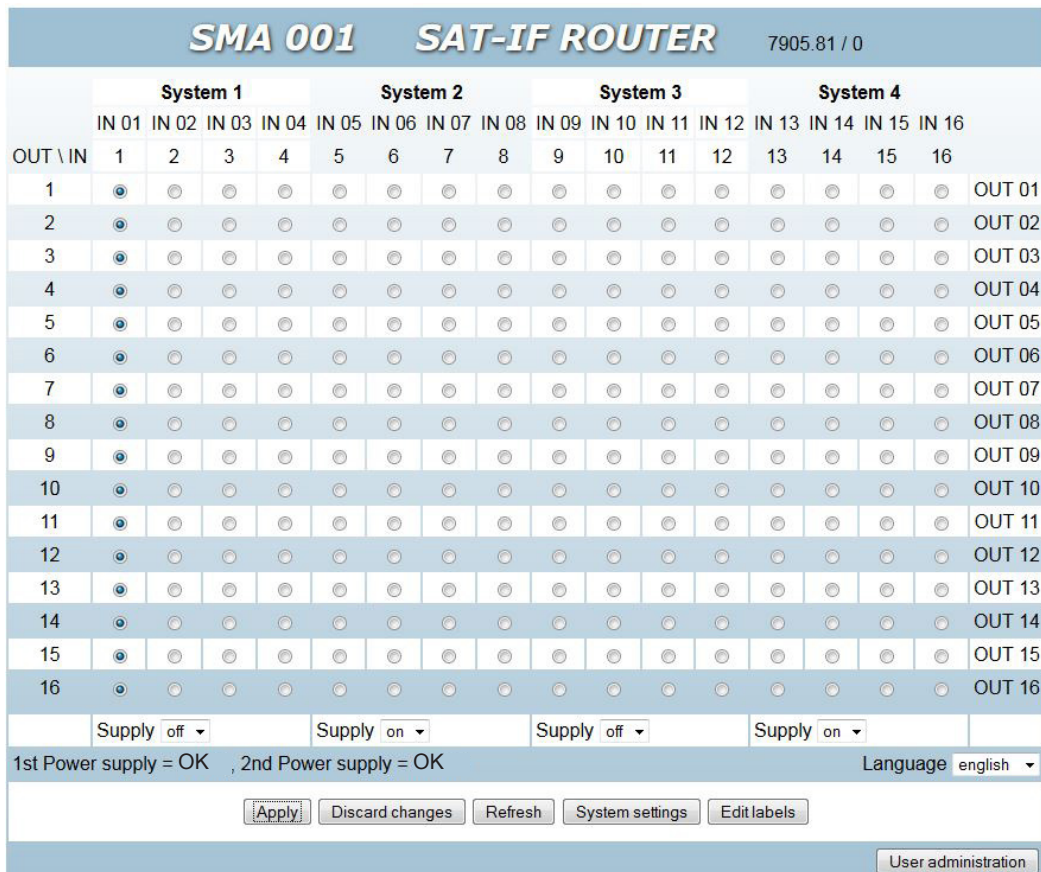
- for the remote programming an internet connection according to IP standard and an ethernet connection to the PC/ laptop is required
- program the provided IP address (default: 192.168.2.80)
- if there is a direct connection between PC and SMA 001, please use a crossover cable (RJ 45)
- if connected via hub, please use a normal straight through patch cable
- start-up the HTML browser and enter the IP address as target address
- after successful connection the web interface will be displayed
- all adjustments of the device are specified on the web interface

7.2 Setting via SNMP

- supported is SNMP version 1.0 [3]
- automatic generation of MIB based on the current headend configuration by the controller
- for setting and reading the parameters and to receive traps from an SNMP management software is required
- further notes on the SNMP functionality of BLANKOM modules are listed in the SNMP manual (»chapter 9)

8. Programming via web interface

8.1 Main menu



SMA 001 SAT-IF ROUTER 7905.81 / 0																	
	System 1				System 2				System 3				System 4				
	IN 01	IN 02	IN 03	IN 04	IN 05	IN 06	IN 07	IN 08	IN 09	IN 10	IN 11	IN 12	IN 13	IN 14	IN 15	IN 16	
OUT \ IN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 01
2	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 02
3	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 03
4	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 04
5	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 05
6	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 06
7	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 07
8	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 08
9	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 09
10	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 10
11	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 11
12	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 12
13	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 13
14	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 14
15	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 15
16	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	OUT 16
	Supply off ▼				Supply on ▼				Supply off ▼				Supply on ▼				
1st Power supply = OK , 2nd Power supply = OK																	
Language english ▼																	
<input type="button" value="Apply"/> <input type="button" value="Discard changes"/> <input type="button" value="Refresh"/> <input type="button" value="System settings"/> <input type="button" value="Edit labels"/>																	
<input type="button" value="User administration"/>																	

Generally, the device name and the item number are named at the top of the window.

In the main menu you can select by clicking on the respective radio button which of the 16 inputs is to be routed to the associated output. Select for each of the 4 input systems whether a supply is input or not (**Supply „on/off“**). This applies to the terminals IN 01, 05, 09 and 13.

Below the status of the PSU is displayed. In the language option you can choose between English and German. The selection is to confirm with the **“Apply”** button. The **“Discard changes”** button resets all settings to the default settings. By pressing the **“Refresh”** button, the current setting will be readout and displayed.

“System settings” opens the menu for network configuration (»chapter 8.2). The button **“Edit labels”** leads to the menu where the access rights are to be assigned.

SMA 001 SAT-IF ROUTER 7905.81 / 0

Edit labels

Device	Inputs	Outputs
	1 IN 01	1 OUT 01
	2 IN 02	2 OUT 02
	3 IN 03	3 OUT 03
	4 IN 04	4 OUT 04
	5 IN 05	5 OUT 05
	6 IN 06	6 OUT 06
	7 IN 07	7 OUT 07
	8 IN 08	8 OUT 08
	9 IN 09	9 OUT 09
	10 IN 10	10 OUT 10
	11 IN 11	11 OUT 11
	12 IN 12	12 OUT 12
	13 IN 13	13 OUT 13
	14 IN 14	14 OUT 14
	15 IN 15	15 OUT 15
	16 IN 16	16 OUT 16

Groups

1 System 1

2 System 2

3 System 3

4 System 4

[Apply] [Discard changes] [Main page]

8.2 Edit labels

In this menu the user can enter own notations in order to obtain a better overview of the system.

The notations maximum length must be 21 characters.

This option exists either for the entire device for the 4 input systems as well as for each of the 16 inputs and outputs. By pressing the **“Apply”** button these terms will be saved and displayed in the main menu. **“Discard changes”** reset all settings to their default value.

SMA 001 SAT-IF ROUTER 7905.81 / 0

System settings

IP Address 192.168.13.189 [Apply] [Discard changes]

Subnet mask 255.255.255.0 [Apply] [Discard changes]

Gateway address 0.0.0.0 [Apply] [Discard changes]

[Download MIB File](#) Right click and save as

[Data from Device](#) Right click and save as

Sicherung laden... [Durchsuchen] Keine Datei ausgewählt [Data to Device]

[Factory settings] [Main page]

Information: Web server version : V2.13/26.07.06/JR MAC Address : 0050C2B751AA
V2.00/05.05.2014/RS 00000000

8.3 System settings

This configuration menu enables the adjustment of the IP address, the subnet mask and the gateway address of the device and thus an adaptation to the network of the user.

Default:
IP address: 192.168.2.80
Subnet mask: 255.255.255.0
Gateway address: 0.0.0.0

By clicking the **„Apply“** button, the settings were saved and the device is set accordingly. **“Discard changes”** reset all settings to their default value.

- **Download MIB File** - is required for operating the device via SNMP, without the web browser (»see chapter 9)
- **Data from Device** - creates a backup file of the previously made settings that can be used as a template. It is important that the file is saved as **filename.sma**.

All device settings, notations, user names and passwords are stored in this file except the administrator and the administrator password. In this way a configuration can be copied from one device to another easily. Via the **„Browse ...“** button, it is possible to call such a template. If the file is selected, it must be sent by **„Data to Device“**.

If unsaved changes have to be discarded, the **“Factory settings”** button reset all settings to their default factory value. In addition, the MAC address of the device and the software version of the web server are displayed.

SMA 001 SAT-IF ROUTER 7905.81 / 0

User administration

	Username	Password
Administrator		
User 1		
User 2		
User 3		
User 4		
User 5		
User 6		
User 7		

Login/Logout Off

[Apply] [Discard changes] [Main page]

V2.00/05.05.2014/RS 00000000

8.4 User administration

In the registration menu up to 7 people can be created, in addition, an administrator **must** be specified. He has full access rights to make changes in this menu. User administration can only be edited with the **„Login / Logout = off“** or as a registered administrator.

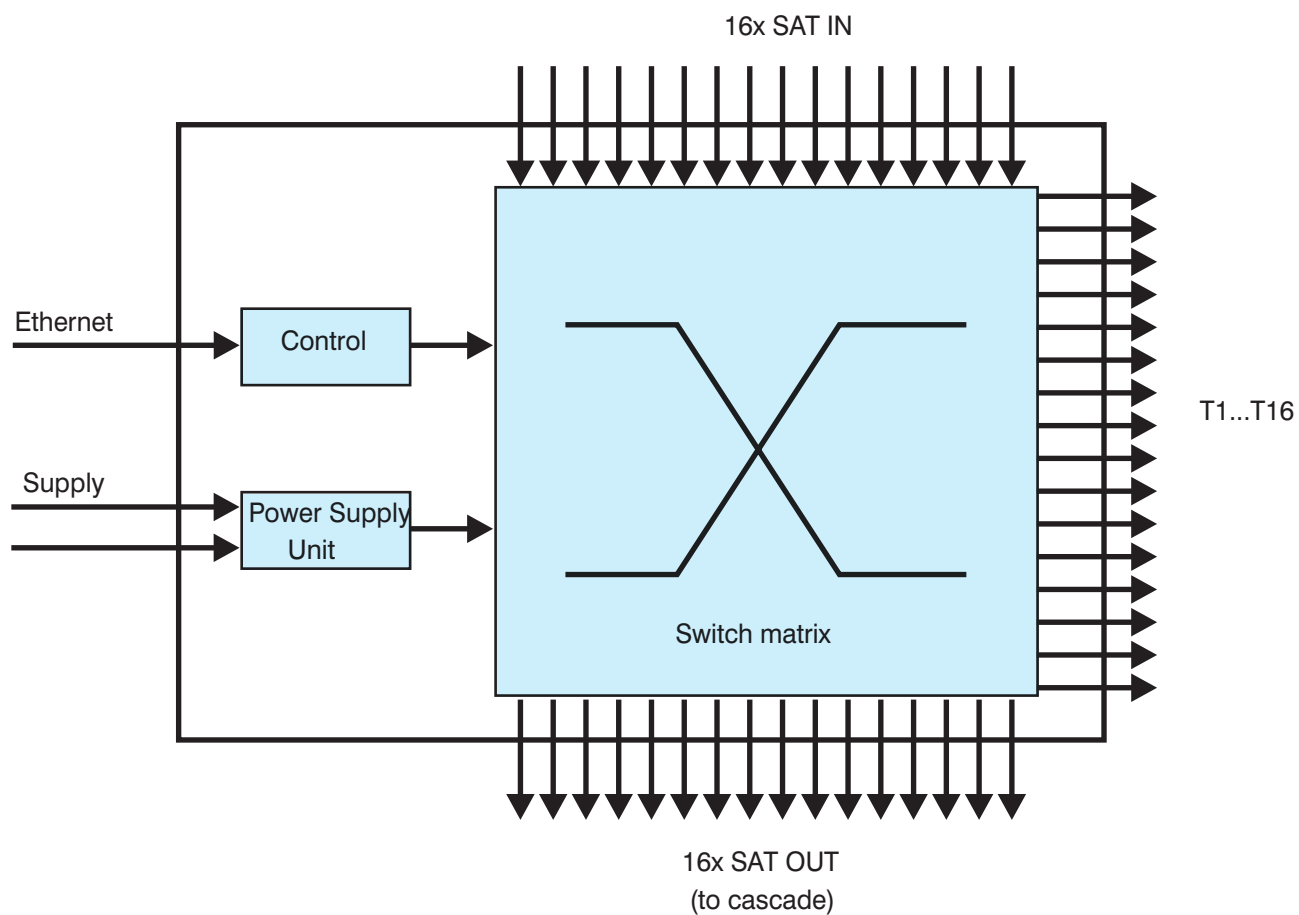
Username and password must not be exceeded in their length of 16 characters and only alphanumeric values are permitted. User names must be unique, so no name may be assigned more than once.

Only one user can be logged in!

If **Login / Logout „On“** (dropd down menu) is adjusted a logoff of the user is required. Users are not automatically logged out even if they close the program.

Additionally an automatic logout is adjustable. After 10 -, 20 - or 30 minutes of inactivity the user is logged off automatically.

10. Block diagram



13. Glossary

DIN	Deutsches Institut für Normung (German Institute for Standardization)
EMC	Electromagnetic compatibility
EN	Europäische Norm (European Standard)
ETSI	European Telecommunications Standards Institute
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
IF	Intermediate Frequency
IP	Internet Protocol
LAN	Local Area Network
LED	Light Emitting Diode
LNB	Low Noise Block
MAC	Media Access Control
MC	Microcontroller
MIB	Management Information Base
RU	Rack unit
SNMP	Simple Network Management Protocol
TV	Television
WAN	Wide Area Network

14. Bibliography

- [1] EN 60728-11: Cable networks for television signals, sound signals and interactive services Part 11: Safety (IEC 60728-11:2005); German version EN 60728-11:2005
- [2] EN 50083-2 : Cable networks for television signals, sound signals and interactive services Part 2: Electromagnetic compatibility for equipment, German version EN 50083-2:2006
- [3] RFC 1157 Request for Comments (RFC): RFC Database URL: <http://www.rfc-editor.org/rfc.html>

15. Document history

Version	Date	Modification	Author
1.00	17.07.2012	Basic document	Häußer
1.01	02.08.2012	Revision	Häußer
1.02	19.09.2012	Revision, device variants	Häußer
1.03	18.06.2014	Revision, chapter 9 added, manual matched to software 2.0	Appelfelder

Options upon request. Changes due to technical progress reserved.

Declaration of Conformity

The Manufacturer

BLANKOM Antennentechnik GmbH · Hermann-Petersilge-Str. 1 · 07422 Bad Blankenburg · Germany

herewith declares the conformity of the product group

Product name: SAT-IF ROUTER
Type: SMA 001
Product number: 7905.81, 7905.82, 7982.83

according to the following regulations

EN 50083-2 [2]
EN 60728-11 [1] (as far as relevant)

and additional device-specific regulations, enclosed above, which these products are subjected to.

Date: 17.07.2012

Signature:



Dr. Piero Kirchner
(Managing Director)